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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,355	02/06/2006	Kuon Miyazaki	P29200	5221
7055	7590	04/18/2008	EXAMINER	
GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191				BERMAN, SUSAN W
ART UNIT		PAPER NUMBER		
1796				
			NOTIFICATION DATE	DELIVERY MODE
			04/18/2008	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com  
pto@gbpatent.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/567,355	MIYAZAKI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	/Susan W. Berman/	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-14 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-4,6-8 and 10-14 is/are rejected.
- 7) Claim(s) 5 and 9 is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 06 February 2006 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 5/06, 8/06.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_.

***Information Disclosure Statement***

The foreign language references listed on the IDS filed 05-08-2006 have been considered to the extent of the disclosure in each Abstract.

***Drawings***

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear from the phrase “comprising various polynuclear phenol compounds” whether applicant intends to claim mixtures of the compounds of the formulas set forth or to claim that the compound can be one of the variant species included in the formulas set forth. The claims do not clearly set forth that applicant intends to claim a mixture of compounds of formula (1) and formula (2) or mixtures of compounds of formula (3) and formula (4), although the last few lines in the claims sets forth a percentage of compounds (e) to (f) or a

percentage of compounds (g) to (h). The phrase “general formula” renders the claim indefinite because it is not clear whether applicant intends to claim compounds of formula (1), formula (2), formula (3) or formula (4) or to claim compounds that are generally the same as those shown in the formulae. It is not clear whether the limitations set forth in parentheses, i.e. “wherein n is ...”, are intended to be claimed or not. If not, the formulae are not clearly defined.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 6 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogima et al (6,361,866). Ogima et al disclose compositions for insulating prepregs and laminated boards comprising a phenol compound of formula (1) wherein n = 0 to 10 and which corresponds to applicant’s formula (1) in instant claim 4 when n = 1-3 wherein the phenol compound is mixed with an epoxidized phenol. The epoxidized phenol can be diglycidyl ether of bisphenol F, epoxidized phenol novolak or tris(hydroxyphenyl)methane (column 3, lines 8-18). Other kinds of epoxy resins can also be included (column 3, lines 19-27). The compositions are said to provide good electrical characteristics and heat resistance. Ogima et al do not teach adding a cationic photoinitiator. However, the cured product of the composition disclosed by Ogima et al would be expected to be the same as the cured product in the instant claim because the components of the composition are the same and the cationic photoinitiator in the instant claims would not be expected to be incorporated into the product. The comprising language of the instant claims

encompasses compositions and cured products thereof containing flame retardants, as taught by Ogima et al. There is no evidence of record that the method of curing produces a product having significantly different properties that would distinguish the product disclosed by Ogima et al from the instantly claimed product.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6-8, 10 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Ogima et al (6,361,866) in view of EP 0 831 127. Ogima et al disclose compositions for prepgres and laminated boards comprising a phenol compound of formula (1) wherein n = 0 to 10 and which corresponds to applicant's formula (1) in instant claim 4 when n = 1-3 wherein the phenol compound is mixed with an epoxidized phenol. The epoxidized phenol can be diglycidyl ether of bisphenol F, epoxidized phenol novolak or tris(hydroxyphenyl)methane (column 3, lines 8-18). Other kinds of epoxy resins can also be included (column 3, lines 19-27). Ogima et al teach that the halogen free resin disclosed has excellent flame retardancy and good electric characteristics and heat resistance and that the prepgreg generates no dioxin during combustion. The prepgres are useful as insulating materials. The difference from the instantly claimed invention is that Ogima et al do not teach adding a cationic photoinitiator.

EP 0 831 127 discloses compositions comprising 50% or more epoxy compounds, 0.05 - 10 pbw cationic photoinitiators and from 1 to 50 pbw of an organic compound having two or more hydroxyl groups, such as polyhydric alcohols and polyhydric phenols, wherein the pbw are based on 100 pbw cationically polymerizable compounds. Bisphenol F, Bisphenol A, phenol novolak resin and cresol novolak resin are specifically mentioned phenols. See page 3, lines 10-19, and page 7, lines 24-26, and lines 42-51). The difference from the instantly claimed invention is that EP '127 does not teach selecting polyhydric phenols comprising three or five phenolic aromatic rings that are not substituted ortho to the hydroxyl groups with methylol or with alkyl or cycloalkyl groups having four or more carbon atoms and wherein each phenolic aromatic ring has at least one unsubstituted position ortho to the hydroxyl group.

It would have been obvious to one skilled in the art at the time of the invention to add a cationic photoinitiator to the compositions disclosed by Ogima et al , as taught by EP '127 in analogous art, for the following reasons. Both patentees teach polymerizable compositions comprising epoxy-functional groups and phenolic hydroxy-functional groups. EP '127 teaches that polymerization can be activated by cationic photoinitiators. One skilled in the art at the time of the invention would have been motivated by a reasonable expectation of successfully activating polymerization of the analogous compositions disclosed by Ogima et al in the presence of a cationic photoinitiator.

With respect to claim 2, It would have been obvious to one skilled in the art at the time of the invention to include any of the polyols taught by EP '127 in the analogous compositions disclosed by Ogima et al. One skilled in the art at the time of the invention would have been motivated by a reasonable expectation of further polymerization of the epoxy-functional

compounds with the polyols added. With respect to claims 13-14, It would have been obvious to one skilled in the art at the time of the invention to include an alkoxy silane as adhesion promoter in the disclosed compositions. One skilled in the art at the time of the invention would have been motivated by a reasonable expectation of improving adhesion between the compositions and a substrate.

Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Ogima et al (6,361,866) in view of EP 0 831 127, as applied to claims 1-4,6-8 and 10 above, and further in view of JP 10102026 A. Ogima et al do not mention laminates such as flat panel displays. J '026 teaches a UV curable adhesive for sealing optical and electronic devices. It would have been obvious to one skilled in the art at the time of the invention to employ the compositions taught by Ogima et al in combination with EP '127 as a sealing composition in a laminate such as a flat panel display, as taught by J '026. One skilled in the art at the time of the invention would have been motivated by a reasonable expectation of successfully sealing a flat panel display because Ogima et al teach that the compositions can be used to provide laminates.

#### *Allowable Subject Matter*

Claims 5 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. With respect to claim 5, the cited prior art does not teach a phenol compound of the formula set forth in instant claim 5. With respect to claim 9, the cited prior art

and prior art otherwise known to the examiner does not teach or suggest in jet ink compositions as set forth in claim 1 and further comprising a colorant.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Eilbeck (6,790,582, having an effective filing date of 04-01-2003). Eilbeck discloses photoresist compositions comprising a novolak resin, a diluent, a cationic photoinitiator and a solvent. The diluent is a novolak resin, such as condensation product of trimethylphenol and formaldehyde. See column 5, line 49, to column 8, lines 16.

Eilbeck 2004/0197704, published 10-7-2004. US Publication '704 is a continuation in part of 6,790,582 and has an effective filing date of 04-29-2004. US '704 teaches that the disclosed compositions are useful for flat panel displays, including electroluminescent displays (see paragraph [0055]).

Takebe et al (5,478,871) disclose polyhydric phenol curing agents for epoxy resin compositions. The polyhydric phenols disclosed differ from the phenols described in instant claim 1 and from the formulae set forth in instant claims 4 and 5 because they are obtained from naphthaldehydes. Cured products and encapsulated semiconductor devices are taught.

WO 03/100524 A1 teaches radiation sensitive resist compositions comprising a phenol compound having a specific structure as dissolution inhibitor that provides improved resolution. See US 2001/0033990 A1 for the disclosure of WO '524. See the phenol compounds in

paragraphs [0196] to [0115]. WO '524 does not teach compositions comprising epoxy compounds.

JP 2002069159 A discloses compositions comprising 40-70 parts by weight polyfunctional epoxy resin, 30-60 pbw phenolic hydroxyl group-containing resin having an alicyclic structure and 1-10 pbw photoacid generator.

JP 6100665 A discloses epoxy resin compositions comprising a mixture of novolak phenol resins wherein a fraction (a) contains 2 benzene rings, a fraction (b) contains 4 benzene rings, and a fraction (c) contains 3 benzene rings. The compositions provide improved heat resistance and dimensional stability and lower viscosity.

Tateishi (2004/0192070) discloses organic electroluminescent devices that can be obtained using epoxide compositions. Compositions as set forth in the instant claims are not taught.

Bocko et al (5,887,522) disclose radiation curable inks for printing a color filter. A cationic ink composition comprising epoxidized novolak, cationic photoinitiator and silane coupling agent is shown in column 6.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Susan W. Berman/ whose telephone number is 571 272 1067. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SB  
4/11/2008

/Susan W Berman/  
Primary Examiner  
Art Unit 1796